CLAIMS

1. A prosthesis comprising a flexible portion and at least one less flexible portion, characterized in that said flexible portion comprises a fibre-reinforced hydrogel.

2. A prosthesis according to claim 1, characterized in that said less flexible portion is provided on a bottom side and/or an upper side of said flexible portion.

3. A prosthesis according to claim 2, characterized in that said less flexible portion is an end plate.

4. A prosthesis according to claim 1, characterized in that said less flexible portion is provided on an inner side of said flexible portion.

5. A prosthesis according to claims 1-4, characterized in that said prosthesis is for replacement of a joint in a human or animal.

6. A prosthesis according to claim 5, characterized in that said prosthesis is for replacement of a part or the whole of a intervertebral disc.

7. A prosthesis according to claims 1-6, characterized in that said flexible portion has swelling characteristics comparable to those of a natural intervertebral disc.

8. A prosthesis according to claim 1-7, characterized in that said flexible portion consists of a slice of a fibre-reinforced hydrogel having a thickness of 5-15 mm.

9. A prosthesis according to claim 8, characterized in that said slice of fibre-reinforced hydrogel has a thickness of 8-10 mm.

10. A prosthesis according to claims 1-9, characterized in that said fibre-reinforced hydrogel comprises at least 5% fibres.

11. A prosthesis consisting of a fibre-reinforced hydrogel, characterized in that the prosthesis is intended to replace cartilaginous materials.

12. A prosthesis according to claim 11, characterized in that said cartilaginous materials are intervertebral discs.

13. A prosthesis according to claims 11-12, characterized in that said prosthesis comprises at least one less flexible portion.

14. A prosthesis according to claim 13, characterized in that said less flexible portion is provided on a bottom side and/or an upper side of said flexible portion.

15. A prosthesis according to claim 14, characterized in that said less flexible portion is an end plate.

16. A prosthesis according to claim 13, characterized in that said less flexible portion is provided on an inner side of said flexible portion.

17. A prosthesis according to claims 11-16, characterized in that said flexible portion has swelling characteristics comparable to those of a natural intervertebral disc.

18. A prosthesis according to claims 11-17, characterized in that said flexible portion consists of a slice of a fibre-reinforced hydrogel having a thickness of 5-15 mm.

19. A prosthesis according to claim 18, characterized in that said slice of fibre-reinforced hydrogel has a thickness of 8-10 mm.

20. A prosthesis according to claims 11-19, characterized in that said fibre-reinforced hydrogel comprises at least 5% fibres.

21. Use of the prosthesis according to claims 1-20, characterized in that said prosthesis is implanted in humans or animals.

22. Method for the use according to claim 21, characterized in that the volume of the prosthesis is reduced prior to the implantation thereof by extracting water therefrom.

23. A method according to claim 22, characterized in that the volume of the prosthesis is reduced by immersing it in a hypertonic salt bath.

24. A method for manufacturing the prosthesis according to claims 1 - 20, characterized in that the fibres are provided on the whole of the flexible portion and/or at least one less flexible portion by winding.

25. A method according to claim 24, characterized in that the angle at which the fibres are arranged with respect to an axis of rotation varies from 5° to 90°.

26. A method according to claim 25, characterized in that said angle varies from 45° to 60°.

27. A method of preparing the flexible portion for a prosthesis according to claim 1 or 11, characterized in that a bar of the hydrogel is formed, from which slices are cut.

28. A method according to claim 27, characterized in that the hydrogel is a fibre-reinforced hydrogel.

29. A method according to claim 27-28, characterized in that said slices are cut by setting up the bar on a lathe and moving a knife through the bar.

30. A method according to claim 29, characterized in that said knife is lubricated during cutting.

31. A fibre material apparently intended for use in the prosthesis according to claim 1 or 11, characterized in that said fibres have a low elasticity modulus.

32. A fibre material according to claim 1 or 11, characterized in that said fibres are capable of absorbing hydrogel monomers.

33. A fibre material according to claims 31-32, characterized in that said fibres are made of polyurethane.